Tacoma City of Tacoma
Public Works Department

March 28, 2003

Megan White, P.E.
Water Quality Program Manager
Washington State Department of Ecology
PO Box 47600
Olympia, WA 98504

Dear Ms. White:

This report is submitted by the City of Tacoma pursuant to Section S10 of the National Pollutant Discharge Elimination System and State Waste Discharge General Permit for stormwater discharges from municipal separate storm sewers for the South Puget Sound Water Quality Management Area. This report covers the year 2002.

I certify under penalty of law, that this document and any attachments, were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for willful violations.

If you have any questions regarding the enclosed report, please contact John Burk, P.E. at 253-502-2103.

Sincerely,

James G. Parvey

James G. Parvey, P.E.
Public Works Division Manager
Science & Engineering Division

JGS:CLS:crt (NPDES 2002 Report)

File: NPDES

City of Tacoma
Municipal Stormwater NPDES Permit

2002 Annual Report

This report provides an update of the stormwater program activities conducted by the City of Tacoma during 2002.

Submitted pursuant to Special Condition S10 of the National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for discharges from municipal separate sewers for the South Puget Sound Water Quality Management Area and the portion of the Kitsap Water Quality Management Area located in Pierce County

Municipal Stormwater NPDES Permit Number WASM11001

Submitted by:
Tacoma Public Works
Environmental Services/Science and Engineering Division
2201 Portland Avenue
Tacoma, WA 98421

March 31, 2003

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2002 Annual Report

INTRODUCTION

This report is being submitted by the City of Tacoma pursuant to Special Condition S10 of the National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for discharges from Tacoma's municipal separate storm sewer system. This annual report covers the reporting period January 1, 2002, through December 31, 2002.

Tacoma received its NPDES Municipal Discharge Permit from the Washington State Department of Ecology (Ecology) in 1995. In 1999, the City's Stormwater Management Program (SWMP) was approved by Ecology as meeting the requirements of that permit. The permit was expected to expire in 2000, but was administratively extended by Ecology and has not yet been reissued.

Comments or questions regarding this annual report can be directed to Christy L. Strand, P.E., Tacoma Public Works Department, Environmental Services/Science and Engineering Division at 253-502-2105 or cstrand@cityoftacoma.org.

1. Status of Implementing the Components of the City's Surface Water Management Program

This report describes the implementation of the City of Tacoma's Surface Water Management Program (SWMP) during 2002. The following reports, documents and activities were completed in 2002 as per the SWMP schedule:

- The 2002 Annual Report was submitted to Ecology.
- The new Surface Water Management Manual, which includes source control measures, was completed.
- The surface water management ordinance, Chapter 12.08 of the City Code, was revised and the changes were adopted by the City Council.
- Changes to the Surface Water Management Manual and ordinance went through the SEPA process.
- Several public workshops were held on the new Manual, and several training sessions were offered to staff from throughout the City.
- A new experienced civil engineer was added to the Surface Water Program.
- A new $50,000 public education grant program was implemented to promote community-based projects that provide environmental education, protection and restoration.
- The Point Defiance Zoo and Aquarium educational partnership was continued.
- A variety of ongoing monitoring activities were done.
- The Stormwater Workplan Addendum for the Thea Foss Waterway was submitted to the U. S. Environmental Protection Agency.
- The City continued to implement the Regional Roads Maintenance Program for the Endangered Species Act.

S7B1 Stormwater Management Program Planning Process

Surface Water Utility staff worked with managers and staff from the Public Works Department, Community Relations and Tacoma Public Utilities to compile the information needed for this report. Public Works staff from the Science and Engineering, Wastewater Operations, Maintenance, Streets and Grounds, Construction, Solid Waste Utility and Building and Land Use Services Divisions assisted. Tacoma Public Utilities staff from Tacoma Power, Tacoma Water and Tacoma Rail also provided information used in this report. Participation by elected officials and the public took place in 1995, 1996, 1999, 2000, 2001 and 2002. The City Council was updated during July of 2002 on the proposed ordinance and manual changes. The City Council adopted the changes to the surface water ordinance in the fall of 2002 and the changes became effective on January 1, 2003.

An experienced civil engineer was added to the Surface Water Program staff in 2002. It is anticipated that other staff will be added in 2003. The City uses a temporary Washington Conservation Corps crew. This crew is part of a yearlong program that began in November of 2001. The program and crew were extended for another year in November of 2002.

Tacoma's Surface Water Utility, along with the Solid Waste Utility and the Wastewater Utility, has a customer advisory panel. This panel is called the Environmental Services Customer Advisory Panel (ESCAP) and has been providing citizen oversight of the Surface Water and other utilities for approximately nine years, since their establishment by the City Council. Panel membership reflects the various user groups of the utilities. Members are recruited from the single- and multi-family residential, government, commercial and industrial sectors. Currently, all three panels meet concurrently, generally once each month, to receive presentations on various utility programs. ESCAP responsibilities include providing oversight into the user rates revision process, reviewing and critiquing major project proposals, administrative policy

changes or additions, as well as proposing new customer service programs and policies resulting from their own brainstorming efforts, and presenting ideas and requests gathered from their own constituent groups.

During 2002, the Surface Water Advisory Panel received presentations on the proposed revisions to the surface water ordinance, the new Surface Water Management Manual, the Business Systems Improvement Project (BSIP), the Foss Waterway Superfund Cleanup Project, the EnviroChallenger Program for grade school environmental education and the proposed public educational grants program. They also reviewed and tested the new Environmental Services website.

A Tacoma Salmon Team was established in early 2001 and continued to meet in 2002. The team consists of staff from throughout the City of Tacoma, including 3 members of the Surface Water Utility staff and staff from Wastewater Operations and Maintenance, Budget, Legal, Construction, Planning, Streets and Grounds, Building and Land Use Services, and other program areas.

S7B2 Water Quality Problems, Needs and Priorities

Analysis of Needs and Priorities

The City's analysis of needs and priorities was included in the SWMP that Ecology approved. The SWMP includes a prioritized list of all of the City's unmet stormwater needs. The bulleted items on the first page of this report highlight many of the unmet needs that were addressed in 2002.

S7B3 Legal Authority

Adoption and Enforcement of Ordinance Containing Standards Equivalent to the Minimum Requirements of Ecology's Stormwater Management Manual

Changes to the City's drainage ordinance, Chapter 12.08 of the City Code, were made in late 2002 and became effective on January 1, 2003. The major changes include the addition of the minimum requirements from the new Surface Water Management Manual, the authority to inspect private businesses and the ability to require maintenance of private stormwater best management practices (BMPs). It also authorized the Public Works Director to implement the new Surface Water Management Manual. Please refer to Section S7B8a Runoff from New Development and Redevelopment for more information about the ordinance. A draft Enforcement Response Plan has also been prepared, but is still under review.

Adoption and Enforcement of Ordinance Prohibiting Pollution Discharges to the City's Municipal Stormwater System

The City's old ordinance prohibited the discharge of pollutants to the City's stormwater system. The newly revised ordinance does also.

S7B4 Monitoring

The City continues to work cooperatively with the Washington State Department of Transportation (WSDOT) in a study of structural stormwater controls. WSDOT has completed construction of the testing facility in Seattle. Due to a lack of funding, only one treatment technology will be tested during the first year. Testing is expected to begin in early 2003. It is intended that the technology will remain in place for approximately one year, and that samples will be taken during storm events occurring during the course of that year (up to 6 events). A Stormwater Management Storm Filter will be tested during the first year. Following the completion of the testing period, the City will evaluate the effectiveness and applicability and reasonableness for use of this technology within the Thea Foss Basin. "Reasonableness" shall

take into consideration effectiveness, maintenance requirements, flood control, and cost in comparison to the effectiveness achieved to date in the Thea Foss Basin as a result of the current source control program.

Please refer to Section S12 Thea Foss Waterway Basin Program for additional information on monitoring activities in the Foss Basin.

The City contracted with an environmental group, Citizens for a Healthy Bay (CHB), for environmental hotline services. CHB's hotline number (253-383-2429) was operational throughout 2002. A media campaign advertised the transfer to the new number. Sixty-one calls were received from July 2001 to July 2002. Most of the calls were related to petroleum products, paint, soap/detergent/foam and paint. Thirty-four of the calls addressed problems in the Foss Waterway and most of the calls received were from citizens.

City staff monitor the shorelines of the entire Commencement Bay area by a City-owned boat. This is done on a monthly basis. The monitoring is done at low tide to the extent practicable. Identified problems are addressed. These bay patrols were performed once each month. Areas of the shoreline continued to be videotaped during patrols. If incidents were detected during a patrol, an incident report form was filled out that documented the incident and the follow-up action or referral. The type of incidents that the boat patrol monitored during 2002 includes suspicious discharges, sheens on the water, construction activity along the shoreline, and waterfront businesses' compliance with appropriate best management practices (BMPs). The benefit of these patrols comes not only from correcting the specific problem, but they also raise the awareness of businesses and the general public about proper operations near the water. Copies of the videotapes and the incident report forms are available upon request.

Citizens for a Healthy Bay, a local environmental group, are sponsoring a Bay Keeper Program. The person hired as the Bay Keeper has a boat and patrols the City's many miles of shoreline. The City provided $10,000 to their program in 2002, and coordinates its efforts with those of this environmental group.

The City of Tacoma provides $25,000 on a yearly basis to help sponsor the Pierce Conservation District Stream Team. The Stream Team has many volunteers that do important, but limited, stream monitoring in several streams including Swan Creek, Puget Creek, and Hylebos Creek. They monitor for pH, temperature, and other basic parameters. Meetings were held between Stream Team and City personnel to focus the program and to identify new monitoring sites.

The Olympic View Resource Area restoration site was completed in October 2002. The planting of riparian trees and shrubs was completed in October 2002. A monitoring plan for the Olympic View Resource Area will be developed in the spring of 2003. This site was one of five to be completed under our consent decree for the Natural Resource Damages Assessment (NRDA) program. Three of the five NRDA sites have been completed to-date. The Middle Waterway site, completed in 2000, is monitored quarterly. The Swan Creek project, completed in 2001, is monitored annually. The remaining two sites are the Tahoma Salt Marsh on Commencement Bay in Old Town and the Hylebos Marsh near the Hylebos Waterway on Taylor Way near East 11th Street.

Developers are required to monitor wetlands in areas where wetlands could be impacted by their development. They are required to submit annual reports for monitoring for 3-5 years. These are summary reports. Wetland monitoring is site-specific. For example, some permits require sampling for fish many times during one season. Approximately one-half of the City's wetlands specialist's time is spent on wetland monitoring activities. These activities include

review of monitoring reports submitted as part of the permit approval process, tracking violations, monitoring shorelines, and field visits. The wetlands specialist made 83 field visits in 2002 to check monitoring reports, look at violations, and for issuance of permits.
There is an official weather station at the Central Wastewater Treatment Plant and four rain gauges located throughout the City. Rainfall data has been recorded since 1953. The rain gauge information is recorded and used as needed. Currently, the City is considering updating these instruments. The City contracts with a weather service and receives weather reports twice a day. This information provides an early warning of heavy rains and potential flooding. Maintenance crews are dispatched to proactively check and maintain trouble spots prior to anticipated heavy rains, to ensure the proper operation of the system.

STORM SEWER MONITORING IN COMMERCIAL/INDUSTRIAL AREAS
Please refer to Section S12 Thea Foss Waterway Basin Program for additional information about monitoring in commercial and industrial areas.

S7B5 Fiscal Analysis

The operation and maintenance of the Surface Water Utility is funded from service charges. No revenue is derived from taxes from the City's general fund. Major capital improvements are funded from revenue bonds and pay-as-you-go financing. The service charges are reviewed annually to insure that they are adequate to pay operation and maintenance costs, debt service, capital improvements and taxes. All changes to the rates must be approved by the City Council.

SURFACE WATER UTILITY

During the reporting period of January 1, 2002, through December 31, 2002, the Surface Water Utility spent $30.0 million. The expenditure categories are as follows:

OPERATIONS:

Transmission	
Personal Services	$655,852.59
Supplies & Other Services and Charges	$642,773.35
Miscellaneous Capital Outlay	$0
Total	**$1,298,625.94**
Pumping	
Personal Services	$57,434.87
Supplies & Other Services and Charges	$158,458.07
Miscellaneous Capital Outlay	$0
Total	**$ 215,892.94**
Holding Basins	
Personal Services	$26,388.89
Supplies & Other Services and Charges	$48,899.21
Miscellaneous	$3,971.20
Total	**$ 79,259.30**

Engineering	
Personal Services	$472,649.66
Supplies & Other Services and Charges	$326,869.40
Miscellaneous Capital Outlay	$40,990.21
Total	**$ 840,509.27**
Source Control	
Personal Services	$1,279,449.38
Supplies & Other Services and Charges	$6,255,856.99
Miscellaneous Capital Outlay	$33,333.76
Total	**$7,568,640.13**
Laboratory	
Personal Services	$325,661.31
Supplies & Other Services and Charges	$108,914.09
Miscellaneous Capital Outlay	$52,296.78
Total	**$ 486,872.18**
MISCELLANEOUS:	
General Services	
Personal Services	$ 598,867.74
Supplies & Other Services and Charges	$4,867,672.78
Miscellaneous Capital Outlay	$42,852.05
Depreciation	$1,145,128.00
Total	**$6,654,520.57**
Debt Service	
Principal and Interest	$2,850,757.02
Other	$42,251.96
Total	**$2,893,008.98**
Other Department Divisions not included above:	
Miscellaneous	
Unknown at this time	
Capital Projects:	
T-Street Gulch	$15,382.05
Foss Waterway Cleanup	$6,085,054.24
NRDA	$2,206,389.42
Misc. Superfund	$86,373.97
Miscellaneous	$1,520,954.22
Total	**$9,914,153.90**
Grand Total	**$29,951,483.21**

A description of the types of activities associated with the above expenditures is contained in Volume III of Tacoma's Stormwater Management Manual. Relating the budget amount in each of the above categories to the actual expenditures is very difficult at this time. Some activities are budgeted in one activity or organization, but are actually spent and therefore charged to a different activity or organization. As a result, the actual expenditure in any one line item does not necessarily relate to the budget number for that same category. Some capital expenditures may be budgeted in the operating budget but the expenditure is taken from the capital budget and vice versa.

The expected revenue from rates in 2003 is $28.6 million. The anticipated expenditures for the year 2003 will likely be about the same as for the year 2002. This is due to increasing activities in the Surface Water Utility. There will be increased emphasis on source control, public education, and on revising the stormwater manual as required by the Department of Ecology. In addition, there are numerous planning, design and construction activities funded by the Utility. Some of these are to comply with federal and/or state orders, consent decrees, mandates, etc. Finally, there will be added demands on staff and Utility resources with respect to the ongoing impact of the listing of salmon under the Endangered Species Act.

S7B6 Data Management

Development of Land Cover Information Maps and Data

A first draft of the stormwater Geographical Information System (GIS) mapping system has been constructed. It is currently being corrected and updated, but it is not fully field checked. The City currently has two full-time staff persons updating and correcting the system using recorded drawings, global positioning system (GPS) points and field inspections. Currently, 30 of the 64 sections in the City have been completed and the project is scheduled to complete the remaining sections by early 2004. The City also has three full-time staff persons working as a GPS team to collect data for all catch basins in the City's rights-of-way. This data will be added to the GIS mapping system to update the current catch basin data, which was gathered from a previous planimetric effort using orthographic photos of a 1990 citywide fly-over project. Currently, data for 18 of the 20 sub-basins (approximately 16,000 catch basins) in the City's stormwater system has been collected and the project is on schedule to complete the remaining sub-basins in early 2003. Following completion of collection and project closure assessment, the second phase of this project, which is to collect data for catch basins outside the City right-of-way, will commence in the late summer or early fall of 2003. The work management data and critical information of the stormwater GIS system is being maintained and updated within a separate Hansen database. The entire City map of wetlands was completed in 2000 and is currently being updated. The collection of maps in the citywide GIS is now available to both internal and external customers via the City's Public Works' GovMe website. The City is currently designing a new comprehensive system known as the Business Systems Information Project (BSIP), that will incorporate the current GIS mapping system, GPS collection points, Hansen database, Stormwater Inspections database and other numerous citywide databases. This BSIP comprehensive system is scheduled for full implementation by the start of 2004.

Description and Location of Major Structural BMPs and Other Structural Controls

This type of mapping is now available and is regularly updated. The information is available on the City's website under "Map Guide."

Mapping Storm Sewer Outfalls and Tributary Conveyances

This type of mapping has been available for many years and is regularly updated.

WATER QUALITY COMPLAINT INVESTIGATIONS AND DATABASE DEVELOPMENT AND MAINTENANCE
A customer request database was developed and was put into place in early 2002. It is used on a regular basis by the surface water source control staff. Complaints, spills, flooding and investigations are tracked in this database. Revisions are still being made to a separate business database. This database will be put into use in the spring of 2003.

S7B7 Intergovernmental Coordination
A lot of intergovernmental coordination takes place in the implementation of the stormwater program specific to the Thea Foss Waterway. Please refer to Section S12 Thea Foss Waterway Basin Program for additional information about coordination activities.

The City has entered into an Interagency Memorandum of Agreement (IMOA) with the Washington State Department of Transportation (WSDOT) for participation in a study of structural stormwater controls. For the City of Tacoma, the overall intent of this IMOA is to work collaboratively to verify the performance of temporary and permanent stormwater treatment technologies, and to evaluate the applicability of these technologies to the conditions in the Thea Foss Waterway. Other participants in this study are the Civil Engineering Research Foundation through the Environmental Technology Evaluation Center (EvTEC), the Washington State Department of Ecology, the City of Seattle, and the University of Washington. Please refer to Section S7B4 Monitoring for more information on this program.

The Tri-County Roads Maintenance Program was developed through the Tri-County ESA process. The program was adopted by the City of Tacoma. Training sessions will be offered to all appropriate City staff in 2003.

The City of Tacoma is also participating in Ecology's Technical Review Committee (TRC). The TRC will evaluate vendor submissions on emerging stormwater treatment technologies. Based on the evaluation, the technologies may be approved by Ecology, through the TRC, for use as part of a stormwater treatment train and/or as stand alone BMPs (Ecology 2002). The results of these efforts will be used to determine whether effective technologies currently exist for reducing concentrations of contaminants of concern in stormwater.

The Washington Conservation Corps (WCC) Program, administered by the Washington State Department of Ecology, was continued for a second year, through October 2003. One WCC project entailed working with the cities of Lakewood and University Place and Pierce County and the Clover Park Technical College to clear out sections of Flett Creek to increase flow in the stream. The WCC crew also helped MetroParks Tacoma with many maintenance activities at various sites.

The City continued its partnership with MetroParks Tacoma in order to promote stormwater pollution prevention messages at the Point Defiance Zoo and Aquarium using interactive murals, staff and specialized fourth grade curriculum. Two large murals were designed and painted showing the City of Tacoma and various pollution prevention messages.

The new "Make a Splash" Environmental Grant Program debuted in 2002. The program was implemented to promote community-based projects that provide environmental education, protection and restoration. It has and will continue to create many opportunities to partner and coordinate with many different entities including non-profits, businesses and other governmental agencies.

Input was received from the City Council, the development industry, internal staff and the Department of Ecology in the development of the Surface Water Management Manual (Manual) and in the ordinance revision process. The Council was updated on the entire process prior to

approving the changes to the ordinance. The Manual and the ordinance went through a State Environmental Policy Act (SEPA) review. Workshops and meetings were held for the public and for staff to gather input used to improve the draft Manual. A series of training workshops were held in late 2002 to introduce the final Manual to staff from the Public Works Department, Tacoma Water, Tacoma Power and Click!Network. Two introductory training workshops were held for the development industry in early 2003. The workshops were very well attended and very well received.

During the implementation of the NRDA consent decree during 2002, coordination took place been various governmental agencies including: U.S. Department of Commerce (National Oceanic and Atmospheric Administration), U.S. Department of Interior (Fish and Wildlife Service), U.S. Environmental Protection Agency, Washington State Departments of Ecology, Fish and Wildlife, and Natural Resources, Puyallup Tribe of Indians and Muckleshoot Indian Tribe. Topics of these meetings included: Design and construction management of the Olympic View Resource Area cleanup/restoration project, including disposition of the derelict vessels on site, permitting and design considerations for the Hylebos Marsh and Tahoma Salt Marsh projects and general coordination of the various components of the consent decree.

Source Control staff met with Ecology hazardous waste inspectors and a Tacoma Fire Department inspector to discuss industry information/concerns and inspection priorities. One outcome of this meeting was an inspection of an abandoned building that is the former site of a metal plating industry. The fire department has given special directions to its staff on how to handle emergencies at this location.

Source Control staff joined Tacoma Police Department narcotics staff to teach five methamphetamine lab awareness classes to over 270 City Public Works and Fire Department employees. The classes were very well received.

Source Control staff also assisted the Tacoma Fire Department Hazardous Materials Team in teaching an eight-hour hazardous materials awareness class to the Public Works on-call Streets and Grounds maintenance staff, who are called out to all types of accidents and dumpings. This class was also very well received.

A large fire occurred at the Burlington Northern Santa Fe (BNSF) railroad yard in December. The fire was under State Route (SR) 509 and adjacent to the City's Central Wastewater Treatment Plant. City staff played a key role during the emergency and worked around the clock to monitor vapor levels and sample the runoff. Efforts were coordinated with Tacoma's Fire and Police Departments, the Washington State Patrol, the Washington State Departments of Ecology and Transportation, the U.S. Environmental Protection Agency, the Puyallup Tribe, Burlington Northern Santa Fe and outside consultants.

The Streets and Grounds Division of Public Works worked with the University of Washington to sponsor a class on Regional Roads Maintenance and the Endangered Species Act.

Drainage issues were also coordinated with the Port of Tacoma.

Source Control staff met with staff from other municipalities several times during 2002 to discuss program implementation, exchange ideas, and resolve problems.

Staff participated in quarterly meetings held by the Pierce County Environmental Educators' Group.

GENERAL COORDINATION FOR MONITORING, MAPPING, DATA MANAGEMENT AND MODELING

The City continues to coordinate a variety of activities with other municipalities and agencies. Issues related to the Flett drainage basin are coordinated with Pierce County, Lakewood, and the Washington State Department of Transportation (WSDOT). Activities related to the ASARCO site are coordinated with the City of Ruston, MetroParks Tacoma, and the U.S. Environmental Protection Agency (EPA). Issues related to the cleanup of the Foss Waterway are coordinated with WSDOT, EPA, the Army Corps of Engineers, the Washington State Department of Natural Resources, the Puyallup Tribe and Ecology. Activities related to the T-Street drainage basin are coordinated with Pierce County. Activities related to the Leach Creek drainage basin are coordinated with the cities of University Place and Fircrest. There is also an environmental group, the Leach Creek Stewards, which has formed with Leach Creek as its focus. The Surface Water Utility staff has met with and has coordinated information with this group. Activities in NE Tacoma, including the Joe's Creek drainage basin, are coordinated with Federal Way. Activities in the Hylebos Creek drainage basin are coordinated with the cities of Federal Way, Fife, Milton, and Edgewood, and with Pierce and King Counties.

The City has also coordinated activities with the environmental group, Citizens for a Healthy Bay (CHB). Coordinated activities have included $10,000 in City financial support for the Bay Keeper Program in 2000, 2001 and again in 2002, and funding to support their operation of an environmental hotline. The City has also worked with this group on storm drain stenciling and curb marker placement. Partnerships with this environmental group are continuing into 2003.

GENERAL COORDINATION FOR CONTROL OF STORMWATER POLLUTION FROM OTHER JURISDICTIONS

The City continues to coordinate with other jurisdictions and agencies in a variety of ways. The City participates in the NPDES municipal permittees group, the Puyallup River Watershed Council, the Hylebos Watershed Action Team, the Chambers-Clover Creek Interim Watershed Council, and the APWA Stormwater Managers' Meetings. Funds are provided to the Pierce County Conservation District to support the Stream Team, which is sponsored by Tacoma, Pierce County, and the cities of Puyallup, Fife, Sumner and Lakewood.

DEVELOPMENT OF COORDINATED SWMPS FOR WATERBODIES SHARED WITH OTHER MUNICIPAL PERMITTEES

The City coordinates with other municipalities to address stormwater concerns in shared waterbodies as described above.

S7B8 Stormwater Control Components

S7B8a Runoff From New Development and Redevelopment

DEVELOPMENT OF AN ORDINANCE CONTAINING MINIMUM TECHNICAL REQUIREMENTS EQUIVALENT TO ECOLOGY'S MANUAL

The City's new Surface Water Management Manual (Manual) was completed in 2002. This Manual regulates stormwater runoff for all new development and redevelopment projects throughout the City, including residential, commercial and industrial sites and roads. The City's new manual is based on Ecology's Stormwater Management Manual for Western Washington that was published in August of 2001. The City's manual contains the same minimum technical requirements as Ecology's manual, plus two additional requirements. A manual team consisting of staff from the Surface Water Management Program and the Legal Department was formed in 2001 to work on this major project.

As part of this process, changes to the City's surface water ordinance, Chapter 12.08 of the City Code, were approved by the City Council. The major changes to the ordinance include the addition of the minimum requirements from the new Manual and provisions for the

inspection of private businesses and the maintenance of private stormwater systems. The ordinance authorizes the Public Works Director to implement the new Manual. Both the Manual and the ordinance went into effect on January 1, 2003. All projects submitting for permits after that date have been required to comply with the new Manual.

Input was received from the City Council, the development industry and internal staff in the development of the Manual and in the ordinance revision process. The Council was updated on the entire process prior to approving the changes to the ordinance. The Manual and the ordinance went through a State Environmental Policy Act (SEPA) review. Workshops and meetings were held for the public and for staff to gather input used to improve the draft Manual. A series of training workshops were held in late 2002 to introduce the final Manual to staff from the Public Works Department, Tacoma Water, Tacoma Power and Click!Network. Two introductory training workshops were held for the development industry in early 2003. The workshops were very well attended and very well received.

The Environmental Services Science and Engineering Division reviews all stormwater plans for new development and redevelopment projects. All designs are reviewed for compliance with the minimum requirements including best management practices (BMPs) for erosion control, water quality, and flow control. Plans are also reviewed for compliance with the City's excavation and grading ordinance and the critical area's preservation ordinance. Environmental Services works with both the Building and Land Use Services (BLUS) and Construction Divisions of the Public Works Department to provide plan review for various projects/permits throughout the City. All stormwater facilities designed by City staff are designed in accordance with the City's manual.

The Environmental Services Wastewater Operations Division also reviews plans for compliance with the Wastewater Pretreatment Standards.

The BLUS Division of the Public Works Department administers the permitting process for all City building permits and land use actions. They collect the permit fees and route all plans to the various City departments for review. BLUS provides conditions for various land use actions such as rezones, subdivisions, wetland and shoreline permits. BLUS inspectors provide the inspections for all private construction projects including grading and erosion control. BLUS also distributes NPDES Construction Notice of Intent Forms to all developers who have projects that will include five acres or more of land clearing activities. These projects require a separate NPDES permit from Ecology. Early in 2003, BLUS will add two additional staff members to handle the increase in work relating to small site erosion control plan reviews and inspections. The Construction Division of the Public Works Department administers City projects and all work performed in City right-of-way. Their administration includes plan review and inspection for these projects. Inspectors for the Construction Division verify that work within the right-of-way is performed to City standards, including installation and maintenance of appropriate BMPs.

In 2000, the Environmental Services plan review process was improved by adding a lead engineer and three additional staff members to the program. Staff includes one engineering technician and three engineers including the team lead. By dedicating a specific team to stormwater plan review, the City has continued to increase the timeliness and quality of the plan review process in 2002. The team provides pre-submittal consultations that identify surface water design requirements prior to applicants' submission of designs for building permits. These consultations allow the City to identify potential erosion and water quality issues prior to plan submittal. The plan review team also provides comments to the City's building official and land use administrator to use as conditions on various land use actions.

A staff person from the Surface Water Program worked with both the BLUS Division of the Public Works Department and with Tacoma's Economic and Development Department in the development of revisions to the City's Critical Areas Ordinance. This ordinance is implemented by BLUS. Surface Water Program staff also worked with the BLUS Division in their update of the SEPA process for industrial sites.

S7B8b Existing Residential and Commercial Development Runoff

The City's current program includes business inspections, drainage complaints, water quality complaints, spill response, interagency coordination, stormwater education, capital improvement projects and a major source control effort in the Thea Foss Waterway drainage basin and enhanced activities in the Snake Lake drainage basin.

The City has had an ongoing business inspection program for several years. The program focuses on three different types of inspections: Formal business inspections, informal inspections or focused inspections, as well as special projects. A lot of improvements were made to this program in 2002. A new database was developed by staff and put into use. It tracks the number of complaints and follow-ups, spills and follow-ups and both planned and unplanned inspections as well as follow-ups. A new Spill Response/Complaint Form was also developed which ties into the database. The following table indicates the level of field inspections that were completed during 2002.

Complaints, Spills and Business Inspections
January 2002 to December 2002

# of Complaints	195
Follow-up	88
# of Spills	48
Follow-up	40
# of Inspections – Planned	106
# of Inspections – Unplanned	106
Follow-up	93
Grand Total	**676**

The City has a crew trained in mapping physical features of the landscape using a global positioning system (GPS). This system uses satellite data to accurately locate drainage features in the field. The City's GPS crew mapped and collected data on 9,320 catch basins in Tacoma during 2002. This project should be completed in early 2003.

The City has a Washington State Department of Ecology (Ecology) delegated Wastewater Pretreatment Program. The staff who performs these inspections also look for stormwater problems. Sixty-five inspections were done with respect to 38 businesses and 68 sampling events were completed for the same businesses. These inspections and sampling events were completed during the pretreatment program's reporting year, July 1, 2001, to June 30, 2002. The pretreatment staff also review building plans for compliance with the Wastewater Pretreatment Standards and respond to stormwater complaints for the Surface Water Utility staff when they are not available. They also respond to spills for Ecology.

The City has a South Tacoma Groundwater Protection District that is located in the south central part of the City. The ordinance that created the district mainly addresses above and below ground storage tanks. The Tacoma-Pierce County Health Department inspects these

businesses for proper chemical storage. Many of the businesses in this district are located in the Thea Foss Watershed. The health department staff did approximately 65 business inspections in 2002.

The City updated its major storm event emergency plan, which requires all surface water staff and many wastewater staff to investigate and abate problems during extreme rainfall events, including processing damage claims against the City. A new brochure titled "When It Rains, Rains, Rains" was also developed for public distribution. A training workshop was held for the staff, followed by a field tour of the City's storm system with a focus on potential problem sites.

In 1997, voters approved changes in Washington State law, permitting utilities to make loans for the purpose of reducing pollution and preserving capacity in stormwater and wastewater treatment and conveyance systems. In April of 1999, The City of Tacoma Environmental Services began offering low interest loans for wastewater or stormwater pretreatment equipment, septic system abandonment, and faulty side sewer replacement or repair. As of January 2003, approximately 1,180 loans have been approved, totaling over $650,000.

Tacoma has a program called "Tacoma Cares" that focuses on cleanup and revitalization of neighborhoods throughout the City. Since 1995 this program has operated more than 500 cleanups resulting in the removal of more than 2,500 tons of debris, has abated over 4,000 nuisance cases, removed more than 22,000 junk and abandoned cars and has completed more than 100 garage/debris removal projects. The program has a "Blight Mobile" operated by the Solid Waste Utility that helps community groups dispose of litter and debris on streets, alleys and other public rights-of-way. These major efforts have resulted in a cleaner environment, which helps result in cleaner stormwater runoff.

A storm sewer was replaced in the downtown area, just north of the Union Station. This project, called the Hood Street Storm Sewer Replacement, consisted of replacing approximately 76 linear feet of 18-inch diameter storm sewer and 719 linear feet of 24-inch diameter storm sewer. A portion of the new pipe was installed within 10 feet of some Burlington Northern Santa Fe railroad tracks. This storm sewer is in the near vicinity of an old gas station and groundwater contaminants that were believed to be infiltrating into the storm sewer and discharging to the Thea Foss Waterway. The existing pipe was severely cracked and missing in places. The new pipe, installed in the fall of 2002, is now watertight and structurally sound. The construction methods for this job consisted of pipe bursting and traditional open-cut methods. The cost of this project was approximately $370,000.

Six existing wooden sump structures were replaced with concrete ones along Marine View Drive. The existing sumps were in very poor condition and allowed a lot of sediment to pass through them into the drainage system. They also had high maintenance costs and presented a hazard to the public as well as to maintenance crews. The existing structures were excavated, replaced with new ones, and gabion baskets and quarry spalls were placed as needed. The new structures have improved water quality by keeping a significant amount of sediment out of the drainage system, which drains to Commencement Bay.

S7B8c Municipal Storm Sewer Operation and Maintenance

The Public Works Department has an Environmental Services/Maintenance Division that is responsible for maintaining both the storm drainage and the sanitary sewer systems. The following table indicates the level of maintenance efforts that were completed during 2002.

Municipal Storm Sewer Operation & Maintenance
January 2002 to December 2002

# of CBs Checked and Cleaned		7,105
# of Scuppers Cleaned		71
# of Culverts Maintained		290
# of Ditches Checked and Maintained		178
# of Detention Ponds & Holding Basins Checked and Maintained		47
# of Manholes Checked		378
# of Manholes Cleaned		178
# Storm Drainage & Flooding Problems Calls		260
Mainline Activities (in feet)		
Velocitied	892'	
Flushed	1330'	
Cleaned	10563'	
Backcut	6666'	
Checked	1020'	
Total # of Feet Maintained:		20471'
Mainline Inspections:		
In House	9484'	
Pay	11203'	
Total # of Feet TV'ed:		20687'

The Environmental Services/Maintenance Division is developing a comprehensive maintenance program that will extend the life of facilities and systems, and improve system reliability and performance. This program includes maintenance improvements and modifications, monitoring and evaluation of system performance, and the development of specific performance standards for each maintenance activity. Some of the critical maintenance activities included in the maintenance program are: TV inspections, catch basin inspection and cleaning, ditch inspection and maintenance, and the cleaning of scuppers and sumps.

The City is working on the development of a program for private stormwater facility maintenance. These responsibilities are included in the City's newly revised stormwater ordinance. Please refer to Section S7B3 for more information on the ordinance.

The Surface Water Management Group has continued to sponsor a Washington Conservation Corps (WCC) crew until October 2003. The WCC is a job training and service program for young adults who are dedicated to conserving and enhancing the natural resources of Washington State. The crew will continue to complete City maintenance projects as well as community proposed projects. They were involved in the maintenance of detention ponds and ditches. The City continues to feel that this is an important program and valuable to the community and the environment.

S7B8d City Road Operation and Maintenance

The Streets and Grounds Division of the Public Works Department is responsible for road operation and maintenance. This division sweeps the streets, does manual cleaning of stormwater features such as culverts and catch basin grates, has a fall leaf pickup program, has a de-icing and snow removal program, and responds to spills.

Operations in 2002 were very similar to those in 2001. The City had two or three sweepers in use on a daily basis. Approximately 4,300 miles of streets were swept and 4,500 cubic yards of material were collected.

Staff members from the Streets and Grounds Division continued to be very active participants in the Tri-County Endangered Species Act (ESA) efforts during 2002. They have proactively adopted the Streets and Roads Program developed by the Tri-County group, and are currently implementing the activities in this program. Additional training needs were identified with respect to this program and they have started work on developing the necessary training. They have a certified professional (instructor) in erosion and sediment control on staff. Training began in the fall of 2002 for all Road Operation Employees on the ESA Program Guidelines, Tracks 2 and 3.

S7B8e Water Quality Considerations in Flood Management Projects

The City did not construct any flood management projects in 2002.

S7B8f Runoff From Pesticide and Fertilizer Application

The City sponsored a lawn mower turn-in event at the recycling center at the landfill. Over 150 gas lawn mowers were recycled. In addition, 32 of these mowers were donated to a local technical college for their small engine repair program. The engines were removed from the mowers and used to train the students in their repair.

Staff and community volunteers participated in a "Natural Yard Day" Program sponsored by a large home improvement store.

The City has a large biosolids-recycling program called TAGRO. TAGRO mix is made from extensively treated wastewater that is mixed with sawdust and sand. It is used extensively as a soil amendment. The City recycles 4,000 dry tons of biosolids a year. TAGRO's nutrients are released slowly, and soil conditioned with TAGRO retains water better. Plants grow very well in soils amended with TAGRO. This program benefits the community on several different levels. TAGRO is used by homeowners' on their lawns and gardens. It's also used on community gardens, parks and other non-residential areas such as forests and agricultural areas. In all cases it returns nutrients to the soil. TAGRO mix is also used in a demonstration garden at the central wastewater treatment plant. This garden produces prize-winning vegetables and over 1,000 pounds of food are given to local food banks each year.

The Snake Lake Watershed Pesticide Monitoring Report was completed and submitted to Ecology in March 2002. A homeowner survey regarding lawn and garden pesticide usage was conducted as part of the monitoring effort. The homeowner survey revealed that herbicide was the most used pesticide overall and most frequently applied in the spring and fall. Water quality monitoring results reflected those of the survey with herbicides being the most frequently detected of the pesticides. A presentation of these findings was given to the Snake Lake Advisory Committee. Education in 2003 will be focused from these findings as well.

The Streets and Grounds Division of Public Works has made significant changes in their operations. They have changed to using mulching mowers on most areas to reduce the need for insect spraying. They have reduced road shoulder spraying by 50% and are still reducing the amount of sterilants used, choosing safer chemicals instead. Many of their employees are licensed pesticide applicators and they've been exposed to Integrated Pest Control Management (IPM) as part of their training. They've also reassessed their expectations and values and are accepting a lower level of "visual appeal" or quality in exchange for providing more protection of the environment.

S7B8g Illicit Storm Sewer Discharge Elimination

The elimination of illegal discharges is one of the City's top stormwater priorities. The City currently has an ordinance that is used to enforce the elimination of illicit discharges. The ordinance was revised in 2002.

The City has three staff people working towards the elimination of illicit discharges. When they do business inspections, they provide the business operators with technical assistance regarding the elimination of illicit discharges and they educate business operators about the proper BMPs to use. Volume II of the City's Stormwater Management Manual, "Stormwater Pollution Prevention Manual: A Guide to Best Management Practices for Industries, Businesses and Homeowners", was used in 2002 in the industrial stormwater program for guidance in the storage and containment of chemicals. This has been replaced by the City's new manual for 2003.

The field staff observe or assist emergency response agencies with spill response activities. They provide the agencies with information on the City's stormwater system with the goal of keeping the spilled material out of the system. They continue to work with mobile washers and charity car wash operators to insure that these types of washing activities are done correctly. The field staff also responds to general concerns regarding water quality problems.

The City has focused on the issuance and regulation of Special Approved Discharge Permits, especially with respect to dewatering activities that take place on some construction sites. There are two ongoing permits that have been issued.

Field staff smoke test or dye test when investigating possible improper sanitary connections to the storm drainage system. This insures that there are no improper connections to the storm drainage system, and if there are, they are corrected as soon as possible.

The City has a household hazardous waste disposal and recycling center located at the landfill. These facilities are open seven days a week, are free to the public and are very popular. In 2002, 1,881 tons of recyclables were collected at the center, which is an increase of 3% over 2001. It provides a place for the community to safely dispose of waste products that otherwise might end up in a storm drain.

S7B8h Industrial Stormwater Monitoring and Control

The City's new Surface Water Management Manual includes a volume on source control best management practices (BMPs). Volume IV, Source Control BMPs, replaces Volume II of the City's old manual. Please refer to Section S7B8a Runoff from New Development and Redevelopment for more information about the City's new Surface Water Management Manual.

The City reviews all commercial plans for adequacy of the private storm sewer systems and their connection to the City's system. New construction is inspected to ensure compliance with City requirements.

The City's four sanitary source control pretreatment staff inspects industrial sites. They also look for stormwater problems during their inspections. The industrial inspections are coordinated with Ecology staff as appropriate. This coordination includes the referral of problem sites to Ecology when the industry has an industrial NPDES permit.

Staff continued to monitor the Clean Care Superfund site for Ecology as time permits.

City staff attended training on industrial sampling and provided comments to Ecology on the Industrial NPDES sampling manual.

A very large fire occurred at the Burlington Northern Santa Fe (BNSF) railroad yard in December. The fire was under State Route 509 and adjacent to the City's Central Wastewater Treatment Plant. The adjoining tank car coupler punctured a BNSF tanker car, containing 30,000 gallons of ethanol mixed with five percent gasoline. The flammable liquid, which was not consumed by the fire, flowed via stormwater drainage through and under the treatment plant complex to the Cleveland Way pump station and into the Puyallup River. Many agencies were involved in the fire response. City staff played a key role during the emergency and worked around the clock to monitor vapor levels and sample the runoff. The SR509 freeway, which was closed during the emergency, was back in service the next day and the rail line was operational within one week. Cleanup efforts included the removal of 4,000 yards of contaminated soil.

S7B8i Stormwater Education

EMPLOYEE EDUCATION

The City encourages its entire Surface Water staff, as well as all other staff working in the construction and water quality related fields, to participate in continuing education. Many staff from throughout the City attended water quality-related training courses in 2002. These classes included topics such as the new Surface Water Management Manual, BMPs, water quantity and water quality, with a major emphasis on erosion and sediment control. The City now has 17 certified professionals in erosion and sediment control. They received their certification from the International Erosion Control Association. Other staff members have taken the two-day Washington State Department of Transportation (WDOT) class. Information about the various classes and number of attendees follows:

Public Works Department

Science and Engineering Division

Workshop on new Surface Water Management Manual – All staff involved in land development review and/or project design
Surface Water Monitoring – 1
QA/QC Management of Environmental Analytical Data – 1
Water Quality Standards Workshop - 1
DOE 303(d) Listing Workshop – 1
Regional Roads Maintenance ESA Program – 1
University of Washington Center for Streamside Studies Annual Review - 1
Tour of Tacoma's surface water management facilities – 12
Fundamentals of Urban Surface Water Runoff – 1
Reining in the Rain – Low Impact Development - 1
Detention pond inspection tour – 7

Sediment Remediation – 1
Landfill Lateral Drainage Design – 2
Community Based Social Marketing Workshop – 1
HAZWOPER Refresher Course – 1
Hazardous Materials Refresher Course – 1
Conference on the Endangered Species Act and Salmon – 3
Urban Stormwater Management - 2

Solid Waste Division
Industrial Stormwater Permit - 3
Manager of Landfill Operations - 2

Construction Division
Workshop on new Surface Water Management Manual – 5
Course work and exam for Certified Erosion and Sediment Control Professional – 3 became licensed

Buildings and Land Use Services Division
Workshop on new Surface Water Management Manual – All staff involved in land development review
Course work and exam for Certified Erosion and Sediment Control Professional – 4 became licensed

Streets and Grounds
Sponsored a Regional Roads Maintenance ESA Program class – 13

Wastewater Operations and Maintenance Divisions
Erosion and sediment control workshop – 1
WSU Master Watershed Steward Program (60hours) – 1
Regional Roads Maintenance ESA Program – 2
Training on spill response – Several staff
Stormwater Pollution Prevention Planning training – Several staff

Tacoma Public Utilities

Tacoma Power, Tacoma Water and Click!Network
Workshop on new Surface Water Management Manual – 46
Construction Site Erosion and Sediment Control, Associated General Contractors – 60
Water Quality - 3
Regional Roads Maintenance ESA Program – 11

City staff members also participate in the APWA Stormwater Managers' Meetings, the NPDES Municipal Permittees Work Group, the Puyallup River Watershed Council, the Hylebos Watershed Action Team, and the Chambers-Clover Creek Interim Watershed Council. All of these provide opportunities for additional stormwater education.

Surface Water Management participated in the 2002 Environmental Services Annual Meeting with staff time and resources. An effort was made to educate all utility employees about what the other utilities do on a day-to-day basis. The three utilities are Surface Water, Wastewater and Solid Waste. About 400 employees attended the meeting.

Most of the Science and Engineering Division surface water staff, including the supervisor, attended a daylong emergency response workshop, which included a field trip of the City's municipal stormwater facilities. The trip allowed the staff to become familiar with the type and location of the facilities and identified "potential trouble spots" during storms. The surface water staff reviewed the emergency response plan that was developed for extreme rain events and the field trip helped to educate the staff about their assigned geographic areas.

Several staff from the Surface Water Program received Public Works, Environmental Services awards for exemplary work. These awards were given to the staff members at the annual Environmental Services staff meeting mentioned above.

PUBLIC EDUCATION

The City runs an extensive public educational program.

The City is one of the sponsors of the Pierce Conservation District Stream Team, a multi-jurisdictional effort. The City provides $25,000 in financial support and some supplies to the Stream Team each year. The Stream Team helps interested Tacoma community groups organize storm drain stenciling efforts. They also offer other programs such as wetland and stream bank cleanups and revegetation, workshops, and tours for the public. The Stream Team has a water quality booth that is displayed at various community events including the Puyallup Fair. The Stream Team has a very large, active group of volunteers with 500 Tacoma residents in their database.

The City also contracts with another local non-profit environmental group, Citizens for a Healthy Bay (CHB), for $12,000 a year to operate a joint water pollution hotline ($2,000) and to run a Commencement Bay-wide water pollution boat patrol service ($10,000) called The Bay Keeper, part of the National Keeper Initiative. One of our community relations staff members also serves on CHB's board of directors and served as the chair of the Education and Outreach Committee in 2002. CHB has a base of more than 600 volunteers in the greater Tacoma area.

Citizens for a Healthy Bay received a Public Involvement and Education (PIE) Grant from the Department of Ecology to promote environmental friendly boating activities. The City coordinated distribution of Clean Bay Boating Kits with this environmental group and distributed 25 of the kits. The City also paid for signs and brochures advertising the boating kits. The signs and flyers were placed at 10 marinas in Tacoma. The flyers are now available at more than 75 locations in Puget Sound.

Stream Team, Citizens for a Healthy, the City's Surface Water Program, Eastside community groups, and Papa John's Pizza sponsored a storm drain-stenciling day in Tacoma in June. Several families joined the community groups to stencil about 200 storm drains in the Thea Foss Waterway Basin. Other stenciling efforts in the City included cub scouts, students from the University of Puget Sound, and other volunteers to put the total at 501 stenciled drains in 2002.

Curb markers continued to be a popular public education tool. These 3.5" x 4" plastic decals are affixed to the top of curbs with adhesive to provide a more permanent reminder to citizens not to dump pollutants down the storm drains. Curb markers were installed in North Tacoma by a variety of community groups including University of Puget Sound Urban Plunge participants, Washington Mutual Bank employees, and other volunteers to the tune of 414 curb markers. A resident in Northeast Tacoma placed approximately 50 curb markers near his home as well.

Surface Water Management is continuing to work with MetroParks Tacoma to support a variety of educational efforts that will focus on stormwater and marine life at the Point Defiance aquarium. 2002 was the second year of a five-year $100,000 grant that supports a joint educational effort. The City committed $20,000 a year for five years towards these efforts. In 2002, these monies created interpretive murals painted by a local artist as well as staffing (April – October) and equipment. A dedication ceremony was held in the spring of 2002. Next year's monies will be put towards the promotion and integration of the new fourth grade curriculum, staffing needs, and a website. The goal is to strengthen the connection between non-point source pollution and Commencement Bay waters in the minds of the visitors. An estimated 72,250 people visited the Marine Discovery Center at the aquarium between April and October of 2002.

The City sponsored a lawn mower turn-in event at the recycling center at the landfill. Over 150 gas lawn mowers were recycled. In addition, 32 of these mowers were donated to a local technical college for their small engine repair program. The engines were removed from the mowers and used to train the students in their repair.

Tacoma's Resource Conservation Steward Program is a volunteer community education program designed to help spread the word about resource conservation to Tacoma residents. Volunteers receive 40-hours of free training in resource conservation, waste prevention, home composting, natural lawn care, and alternatives to household hazardous waste. In exchange, volunteers make a 40-hour commitment to share the knowledge and skills they've gained with Tacoma residents. Resource conservation stewards make an invaluable contribution to the community as they educate residents in local neighborhoods, schools and workplaces. Stewards provide useful information that helps City of Tacoma residents make informed decisions about waste prevention, the wise use of resources and ways to minimize the environmental impacts of our everyday activities. The first class in 2002 numbered 16 graduates. These graduates have already contributed over 200 hours of volunteer work at many City events and festivals. The next class, scheduled to begin in March of 2003, already has 23 applicants.

The EnviroChallenger Program proved to be a very popular educational tool in 2002. In fact, the program has been so successful that a second educator is being added in 2003 to keep up with teacher demand, increase our presence at community events and to work with Tacoma businesses on waste reduction. This staffed, mobile, educational unit visited 44 of 50 Tacoma schools and provides environmental education to K-5 children. The educational programs include: Water Quality, Watersheds, Recycling and Waste Prevention, Household Hazardous Materials, Salmon and the Endangered Species Act, The Waste Stream, and Worm Composting. Pre- and post-lessons are available that teachers can download from the EnviroChallenger website.

The EnviroChallenger messages reached approximately 11,600 kids in Tacoma in 2002, through 506 classroom presentations. The EnviroChallenger continues to be an award-winning program. It received the National Environmental Achievement Award, Public Information and Education - Association of Metropolitan Sewerage Agencies, Award of Excellence-APEX, Gold Award, Environmental Education School Curricula-Solid Waste Association of North America, Silver Circles-Second Place, Marketing Materials-3CMA, Award of Excellence-Third Place, Organizational Excellence Award-Environmental Education Association of Washington, Service Delivery-3CMA, and the Preserve Planet Earth Award-Tacoma Rotary. The program coordinator presented at the North American Association of Environmental Educators Conference in Boston. The City of Tacoma is very proud of this successful program.

Personnel from various divisions of Public Works staffed a booth at Tacoma's Home and Garden Show. They answered questions for the public, many of which related to water quality concerns. Staff participated in a variety of other educational activities such as Channel 12-TV Tacoma appearances on a talk show program called "CityLine" and on a news magazine show called "CityScape". Staff also assisted with the Stream Team's water quality booth at the Puyallup Fair. Personnel also participated in staffing a booth at NatureFest, the Maritime Festival on the Thea Foss Waterway, Natural Yard Days, a Neighborhood Council Celebration at Wright's Park and a Watershed Summit held at Foss High School. Surface Water Management also distributed flyers and posters focused on things that the community could do to protect water quality such as car washing, auto maintenance, pet waste disposal, and use of yard chemicals.

The "Make a Splash" Environmental Grant Program made its debut at the end of 2002. Tacoma's Environmental Services Customer Advisory Panels (ESCAP) worked on and supported the development of this important new program. In addition, several members of ESCAP volunteered to assist in the development of the program and in the review and evaluation of the submitted grant proposals. The focus of the grant program is to fund community based projects that concentrate on and actively work towards environmental education, protection, and restoration. Twenty qualifying applications were received. Of the $50,000 in grant funds available, $21,297 will be awarded, $11,250 will be awarded pending acceptable clarification of grant proposals, and $8,495 was denied because of inconsistency with grant criteria. Approved grant monies will be awarded in early 2003.

The City kicked off its work to clean up the Superfund-level contamination of the Thea Foss Waterway in December 2002 with a large celebration presided over by Tacoma's mayor and other political dignitaries. Motivational and educational speeches regarding stormwater were given, and at the end of the event, participants flung a fish-friendly habitat mix into the water with garden trowels to symbolize the "groundbreaking" of this auspicious event. Commencement Bay was named a Superfund site back in 1983. The City has contracted with an outside company to help with community outreach and education about stormwater and cleanup issues related to the Foss over the next three years.

Environmental Services developed and distributes its "Envirotalk" Newsletter. The six-page newsletter, which is printed on recycled paper, includes articles relevant to the Surface Water, Wastewater and Solid Waste Utilities and is distributed to 52,000 single-family residences in Tacoma three times per year.

Tacoma Water sponsored a variety of water related educational efforts in 2002. Fifth and seventh grade students participated in a poetry contest. They were asked to write a haiku poem about water. Winners of the contest won prizes. The following is a sample of one of the award winning haiku poems:

Water

Water: majestic,
Life-giving, creation's jewel.
World's greatest treasure.

Tacoma Water also sponsored a tour of the Green River Watershed for 40 Tacoma area schoolteachers. In cooperation with the Water Conservation Coalition of Puget Sound (WCCPS), they provided water quiz bookmarks and the educational brochure "Shared Waters" to area schools. They sponsored two promotional efforts in partnership with the Tacoma Sabercats and the Tacoma Rainiers professional sports teams. Through these two

efforts, kids received cards with water conservation tips and water education activity books. Tacoma Water also sponsored "AquaQuest" a water education and tour program. Approximately 1,500 students participated in the program, learning about Tacoma's drinking water system and/or toured the Green River Watershed.

The City of Tacoma elected to continue its sponsorship of the Department of Ecology-administered Washington Conservation Corps (WCC) Program. $130,000 a year is split between Ecology and the City in order to fund the program. The six person crew worked on many community projects as well as City maintenance of restoration sites and stormwater facilities. Part of the program includes training and education for the crew members.

The Clean Bay Car Wash Program was offered again in 2002. Car wash kits were loaned to non-profit groups to ensure that the dirty wash water from charity car washes was safely discharged to the sanitary sewer, instead of draining to the stormwater system. A renewed publicity effort for the car wash kits is planned for 2003.

Waters in Washington State, and throughout the world, are becoming contaminated by mercury. In May of 2002, the City of Tacoma received a Washington State Department of Ecology grant to conduct a mercury reduction and education campaign. Advertising, public service television announcements, educational materials, and presentations were aimed at residents and businesses to increase awareness of commonly used products that contain mercury, mercury-free alternatives, and proper disposal and recycling. The campaign was kicked off in February 2003 with a thermometer exchange conducted in partnership with Pierce County Environmental Services and Pierce County Rite Aid and Bartell drug stores.

Surface Water Management staff worked extensively with reporters from local newspapers, radio and TV stations about issues related to surface water.

Education of the public also took place as part of the City's formal Business Inspection Program.

S12 Thea Foss Waterway Basin Program

The City's NPDES municipal stormwater permit, issued in 1995, contained a special provision requiring the development of a stormwater program specific to the Thea Foss Waterway. Much of the work to establish the program was done in 1995 and early 1996, prior to this reporting period.

Source control activities conducted within the Thea Foss Waterway Basin during 2002 are documented in the Quarterly Source Control Reports submitted to Ecology and EPA. In 2002, source control efforts within the Thea Foss Waterway Sub-watershed continued to focus on outstanding issues and concerns. A detailed list of ongoing issues and concerns has been compiled by the Stormwater Source Control Workgroup, consisting of representatives from the City of Tacoma, the Department of Ecology (Ecology), the U.S. Environmental Protection Agency (EPA), the Thea Foss Participants' Group, the University of Washington – Tacoma and Citizens for a Healthy Bay. The work group meets quarterly to cooperatively discuss and provide status updates on each action item.

STORMWATER WORKPLAN ADDENDUM

During 2002, the City worked with the U.S. Environmental Protection Agency (EPA) to finalize the details of the Stormwater Workplan Addendum. This was a major staff focus. The final document was submitted to EPA in January 2002. The City of Tacoma is the first municipality to do this type of work, and is breaking new ground while serving as a model for other Superfund sites. This workplan addendum outlines the various activities that the City is

performing to prevent recontamination of the receiving water sediments within the Thea Foss and Wheeler-Osgood Waterways. A schedule for these activities is also included. The document includes a description of ongoing stormwater monitoring efforts, studies, source control efforts and BMP assessments, as well as an approach to future stormwater source control decision-making. Specific activities outlined in the document include:

- NPDES Stormwater Monitoring for Thea Foss and Wheeler-Osgood Waterways
- Phthalate Source Study for Thea Foss and Wheeler-Osgood Waterways
- Total and Dissolved Constituents in Stormwater for Thea Foss and Wheeler-Osgood Waterways
- WSDOT/UW and other Stormwater Technology Studies
- Source Control Program
- Phthalate Source Study Phase II will look at specific products

Quarterly and Annual Source Control Summary Reports will be submitted to EPA and Ecology under this program. The NPDES Stormwater Monitoring for Thea Foss and Wheeler-Osgood Waterways will be conducted under an Administrative Water Quality Order No. DE 01WQHQ-3241 issued by Washington State Department of Ecology on September 13, 2002.

WATER QUALITY ORDER FOR NPDES STORMWATER MONITORING

During 2001, the City worked with EPA and Ecology to finalize the NPDES Stormwater Monitoring Sampling and Analysis Program. Under the program, seven outfalls discharging to the waterway are to be monitored for five years. Ten storm samples and four base flow samples are to be collected at each outfall per year. In addition, sediment trap samples at each of the outfalls are to be collected every fall/winter of each year. The resulting data was summarized and evaluated in an annual report. Year one of the sampling program started in late August 2001. The first annual report was completed in December 2002 for the first sampling period of September 2001 though August 2002.

INSPECTIONS

In 2002, stormwater specific inspections were conducted at businesses within the Thea Foss Sub-watershed and other watersheds. Most of the inspections were performed to evaluate compliance status at businesses where concerns were previously noted. Inspections of ponds and municipal stormwater facilities were also started. The very detailed Source Control Quarterly Reports contain summaries of the Foss Basin inspection activities and are available for review.

EDUCATION

The City continues to provide residents and businesses with educational handouts and pamphlets pertaining to BMPs. Residential letters and pamphlets are distributed in neighborhoods following complaint investigations. During inspections, businesses are provided both general and specific BMPs targeting applicable activities. Staff participated in the Maritime Fest, a festival held on and next to the Thea Foss Waterway.

COMMERCIAL AND INDUSTRIAL MONITORING

A variety of activities were completed with respect to the monitoring of commercial and industrial sites. A WSDOT landfill site under the 38th Street East Bridge and an old City fill at South 35th Street and Pacific Avenue were monitored. The WSDOT site was found to be discharging to the storm system and the agency was requested to cease the discharge and to submit a designed plan for the site. WSDOT has been working with the Tacoma-Pierce County

Health Department and they will be issuing a solid waste permit to WSDOT for this site in early 2003. No problems were found with the old City fill site, but the health department conducts methane monitoring at the site two times a year.

Extensive work was done installing, maintaining and sampling sediment traps in stormwater conveyance systems. New stations were added to the south end of the Pacific Avenue area, an area that drains to Outfall 237B. Additional information about the sediment traps and other commercial and industrial monitoring activities are included in the quarterly reports.

SPILLS

No significant spills reached the Thea Foss Waterway during 2002, although City staff responded to a number of spill complaints.

Spill reports are kept on file and reported to the agencies in the quarterly progress reports.

2. Notification of Any Recent or Proposed Annexations or Incorporations

As included in the annual report for 2001, the City annexed a ¾-acre parcel at East 91st Street and McKinley Avenue. The annexation became effective on January 1, 2002.

3. Differences Between Planned and Actual Expenses

Relating the planned expenditures in each of the above categories to the actual expenditures was still very difficult in 2002. The City's budget and fiscal tracking systems are not structured to fit the NPDES needs. They were developed to comply with the state auditor requirements and conform to the Government Accounting Procedures (GAP). Some activities are budgeted in one activity or organization but are actually spent and therefore charged to a different activity or organization. As a result, the actual expenditure in any one line item does not necessary relate to the budget number for that same category. Finally, some capital expenditures may be budgeted in the operating budget but the expenditure is taken from the capital budget and vice versa.

The City is developing new accounting software in its Business Improvement System (BSIP) project. The system will allow the City to better manage budgets. Unfortunately, the system won't be "live" until 2004.

Based on permit negotiations with Ecology, the requirement for financial reporting will not be included in the next NPDES permit.

4. Revisions, if Necessary, to the Remaining Years of the Fiscal Analysis Reported in the Approved Stormwater Management Program

Revisions to the fiscal analysis section are not necessary.

5. For the Fourth Year Report, a Summary and Analysis of the Cumulative Monitoring Data Collected Throughout the Term of the Permit

The fourth year report was submitted in September 1999.

6. A Summary Describing Compliance Activities, Including the Nature and Number of Official Enforcement Actions, Inspections and Types of Public Education Activities

The Building and Land Use Services Division of Public Works is responsible for the permitting of a wide variety of land use activities throughout the City. They issue residential and commercial building permits, clearing and grading permits, and permits for shorelines, wetlands and other critical areas. They also process all land use permit applications including short plats, formal plats and other activities. During 2002, the following actions were taken

- Erosion control inspections – 1,129
- Grading and filling permits - 59
- BMP failure inspections - 74
- Tracking sediment off-site - 47
- Grading inspections – 47
- Wetland permits – 19
- Wetland inspections – 108
- Wetland enforcement actions - 14

The Wastewater Management Operations Division issued a warning letter and then a notice of violation to a laundry business in late 2002. The business had been discharging pollutants into the City's storm drainage system. The laundry submitted a letter to the City within a week of receiving the notice of violation. The letter outlined their proposed action steps for eliminating the problems and they then followed through with their described actions. An inspection in early 2003 showed that all of the problems had been resolved.

A cease and desist letter was sent to WSDOT regarding a landfill site located under the 35th Street East bridge. Please refer to Section S12 Thea Foss Waterway Basin Program, Commercial and Industrial Monitoring for more information on this site.

The Science and Engineering Division staff implemented a new tracking system in 2002. All complaint calls are now tracked. Please refer to Section S7B8b Existing Residential and Commercial Runoff for more information on this tracking system and the number of complaints received. The water quality types of complaints that were addressed included concerns such as vehicle storage, working on vehicles, paint waste/wash-up, spills relating to vehicular accidents, business practices related to improper storage of chemicals, and vehicle and equipment washing. For the most part, these types of complaints were taken care of through education of the citizens involved.

The Surface Water staff also responds to erosion and sediment control complaints. Problems ranged from lack of, or improperly installed silt fencing, to tracking of sediments onto City rights-of-way. There were also problems in 2002 associated with discharging turbid water into the stormwater system via direct connections and/or physically pumping water from a low spot to a catch basin or a manhole.

Citizens for a Healthy Bay, a local environmental group, operate a pollution hotline in cooperation with the City. The hotline received 61 calls from July 2001 to July 2002 from the public, agencies and agency volunteers. The pollutants most frequently reported were petroleum products, paint, soap/detergent/foam and sediment. The calls were referred to the appropriate agency for action, including the City, the Washington State Department of Ecology and Pierce County Water Programs. Two calls were referred to marina managers and the referral of two calls was not specified.

Staff from the Washington State Department of Ecology also responded to many water quality complaints and concerns within the City during 2002. Often, these cases are referred to City staff for inspection. Some of these sites may have been located in unincorporated areas outside of the city limits of Tacoma, but were tracked as having a Tacoma address. Ecology staff provided the following numbers:

- Spill calls except drug labs – 196
- Water quality referrals – 38
- City referrals – 30
- Water pollution calls – 143
- Drug labs – 149

7. Identification of Known Water Quality Improvements or Degradation

Charitable groups that sponsored car washes utilized the City's Clean Bay Car Wash Program. The use of the car wash kits prevented a lot of dirty, soapy water from entering our stormwater system. Community groups were also educated through this program about the importance of keeping our water clean.

The City completed the Olympic View Resource Area Cleanup/Restoration Project on the shores of Commencement Bay in 2002. The project involved removing over 600 wood-creosoted pilings and excavating 11,438 tons of sediment from contaminated intertidal areas. Following excavation, approximately 14,500 tons of sand backfill and capping materials were placed within these areas to restore intertidal habitat. In addition, a total of 2,291 tons of rounded river rocks up to 6-inches in diameter were placed over portions of the restored intertidal areas to provide a minimum 6-inch thick surface erosion protection layer. A contaminated subtidal area was capped with approximately 9,000 tons of sand cap material placed from a barge-mounted tremie tube. The capping material is expected to promote colonization by eelgrass and other benthic organisms over the restored area.

Staff made major efforts to track, contain and investigate the source of a heavy tar oil that was infiltrating into storm drainage lines along East 19th Street and East D Street, reaching Outfall 245, which drains to the Thea Foss Waterway. This work included intensive TV taping of sewers and two groundwater studies, plus the abandonment (pumping, cleaning and grouting) of a 1919 era six-inch petroleum line. The project, which extended over several blocks, required close coordination with local businesses.

Improvements were made to State Route16 by the Washington State Department of Transportation. These improvements were made to runoff controls and water quality treatment to both the Thea Foss drainage and the Flett Creek drainage near Union and Center Streets.

There was a fuel spill at the University of Puget Sound, which entered the lower reaches of Puget Creek. The University was fined by Ecology and they are now doing in-kind payments to the Puget Creek Restoration Society for improvements to the creek.

Tacoma Water was abandoning a 40-million gallon drinking water reservoir near the T-Street Gulch and replacing it with a 20-million gallon above ground tank. Discharge from the construction site was going into the gulch. After contact by staff from the Surface Water Program, they promptly implemented erosion control measures.

Please refer to Section S7B8h Industrial Stormwater Monitoring and Control for information about a large industrial fire adjacent to the Puyallup River. The quick response and involvement of City staff kept water pollution from the fire under control.

Please refer to the Foss Waterway Source Control Quarterly Reports described under Section S12 Thea Foss Waterway Basin Program for additional information about water quality improvements.

8. Status of Watershed-wide Coordination and Activities which the Permittee has Undertaken Individually or Jointly as Part of the Special Condition S7B7.

Please refer to Section S7B7 for information on watershed-wide coordination and activities.